

## PATENT COOPERATION TREATY

## PCT

## INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

|  |  |   |
|--|--|---|
| Applicant's or agent's file reference<br>F1255P-WO | <b>FOR FURTHER ACTION</b><br>see Form PCT/ISA/220<br>as well as, where applicable, item 5 below. |   |
| International application No.<br>PCT/JP2004/008152 | International filing date (day/month/year)<br>04/06/2004   | (Earliest) Priority Date (day/month/year)<br>06/06/2003 |
| Applicant<br><br>NIPPON STEEL CORPORATION          |  |   |

BEST AVAILABLE COPY

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 4 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

## 1. Basis of the report

- a. With regard to the language, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ The international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

- b. ☐ With regard to any nucleotide and/or amino acid sequence disclosed in the international application, see Box No. I.

2. ☐ Certain claims were found unsearchable (See Box II).

3. ☐ Unity of invention is lacking (see Box III).

## 4. With regard to the title,

☒ the text is approved as submitted by the applicant.

☐ the text has been established by this Authority to read as follows:

## 5. With regard to the abstract,

☒ the text is approved as submitted by the applicant.

☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

## 6. With regards to the drawings,

- a. the figure of the drawings to be published with the abstract is Figure No. 1

☒ as suggested by the applicant.

☐ as selected by this Authority, because the applicant failed to suggest a figure.

☐ as selected by this Authority, because this figure better characterizes the invention.

- b. ☐ none of the figures is to be published with the abstract.

## INTERNATIONAL SEARCH REPORT

International Application No

PCT/JP2004/008152

## A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 B21B27/10

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 B21B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, PAJ

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category * | Citation of document, with indication, where appropriate, of the relevant passages  | Relevant to claim No. |
|------------|---|-----------------------|
| A          | PATENT ABSTRACTS OF JAPAN<br>vol. 0181, no. 14 (C-1171),<br>24 February 1994 (1994-02-24)<br>& JP 5 306397 A (SUMITOMO METAL IND LTD),<br>19 November 1993 (1993-11-19)<br>cited in the application<br>abstract | 1,2                   |
| A          | PATENT ABSTRACTS OF JAPAN<br>vol. 0102, no. 27 (M-505),<br>7 August 1986 (1986-08-07)<br>& JP 61 063311 A (NIPPON KOKAN KK <NKK>),<br>1 April 1986 (1986-04-01)<br>abstract<br><br>-----<br>-/--                | 1                     |

☒ Further documents are listed in the continuation of box C.☒ Patent family members are listed in annex.

## \* Special categories of cited documents:

\*A\* document defining the general state of the art which is not considered to be of particular relevance

\*E\* earlier document but published on or after the international filing date

\*L\* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

\*O\* document referring to an oral disclosure, use, exhibition or other means

\*P\* document published prior to the international filing date but later than the priority date claimed

\*T\* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

\*X\* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

\*Y\* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

\*&amp;\* document member of the same patent family

Date of the actual completion of the international search

15 September 2004

Date of mailing of the international search report

23/09/2004

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2  
NL - 2280 HV Rijswijk  
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,  
Fax: (+31-70) 340-3016

Authorized officer

Forciniti, M

BEST AVAILABLE COPY

## INTERNATIONAL SEARCH REPORT

International Application No  
PCT/JP2004/008152

## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

| Category * | Citation of document, with indication, where appropriate, of the relevant passages  | Relevant to claim No. |
|------------|---|-----------------------|
| A          | <p>PATENT ABSTRACTS OF JAPAN<br/>vol. 2000, no. 14,<br/>5 March 2001 (2001-03-05)<br/>&amp; JP 2000 312903 A (NIPPON STEEL CORP),<br/>14 November 2000 (2000-11-14)<br/>abstract</p> <p>-----</p> | 1                     |

BEST AVAILABLE COPY

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/JP2004/008152

| Patent document<br>cited in search report |   | Publication<br>date | Patent family<br>member(s) | Publication<br>date |
|---|---|---------------------|----------------------------|---------------------|
| JP 5306397                                | A | 19-11-1993          | JP 2570060 B2              | 08-01-1997          |
|   |   |                     | JP 2570072 B2              | 08-01-1997          |
|   |   |                     | JP 5306399 A               | 19-11-1993          |
|   |   |                     | US 5352373 A               | 04-10-1994          |
| JP 61063311                               | A | 01-04-1986          | NONE                       |                     |
| JP 2000312903                             | A | 14-11-2000          | NONE                       |                     |

BEST AVAILABLE COPY